

Remarks

Claims 1-17 were pending.

Claims 1, 7, 14 and 15 are amended.

Claim 5 is original.

Claims 2, 10 and 11 are cancelled.

Claims 3, 4, 6, 8, 9, 12, 13, 16 and 17 are as previously presented.

Claims 18-23 are new.

The application now contains claims 1, 3-9 and 12-23.

Claim 1 is amended for clarity by inserting the term "opaque" into line 1. The coatings are inherently opaque as referenced in the titled and born out by the covering power detailed on page 7 line 13 and in the examples. Claim 1 is also amended to delete from component b) dioxazines, indanthrones and phthalocyanines.

Claim 7 is amended to delete from component b) dioxazines, indanthrones and phthalocyanines.

Claims 14 and 15 are amended for clarity by inserting the phrase "having a specific surface area of from 20 to 50 m²/g" into line 2, support is found in claim 1.

Support for new claims 18-20 and 23 is found in the specification, page 5 lines 17-21; support for new claim 21 is found in the specification page 2 lines 15-17; support for new claim 22 is found in the specification on page 3 line 5-7.

No new matter is added.

Rejections

Claims 1-17 are rejected under 35 USC 103(a) as obvious over Hendi et.al., US 5,618,343, which discloses pigment compositions with increased flop comprising small particle pigments and phthalocyanine, indanthrone or carbazole dioxazine flop enhancing agent and Hao et. al., US 5,821,373, which discloses solid solutions of DPP pigments with a second DPP or quinacridone.

Applicants respectfully traverse the rejections.

With the present amendments deleting dioxazines, indanthrones and phthalocyanines from the instant claims, no overlap exists between the instant component b and the flop enhancing agents of Hendi. Applicants also respectfully point out the compositions of Hao are solid solutions wherein both pigments are comprised by a single pigment crystal while the instant compositions are physical mixtures of pigments, in some embodiments of the instant invention the pigments are in different layers.

Therefore, Applicants respectfully submit that the limitations of the instant claims are not met by the combined art.

Applicants however wish to further explain differences between the cited art and the instant invention. The instant invention is directed at improved opacity surprisingly obtained by the instant DPP compositions, i.e., 3,6-di(4'-biphenyl)-2,5-dihydro-pyrrolo[3,4-c]-pyrrole-1,4-dione pigment having a specific surface area of from 20 to 50 m²/g and a further pigment of component b. The value of obtaining improved opacity allowing for the use thinner coating films is discussed; for example, in the beginning paragraphs on page one of the specification.

Hendi is directed at enhancing the flop of compositions containing transparent pigments. Applicants point to, for example, column 1, lines 9-23 and column 3 lines 65-67. The concept of improving flop of small particle size pigments is consistent with a transparent coating. The Examiner notes that Hendi discloses DPP pigments and a pigment size range from 40 to 100 m²/g which overlaps with the range of 20 to 50 m²/g of the instant DPP pigment, also known as Pigment Red 264.

Applicants respectively note however, as stated in the enclosed declaration under 132 signed by Roman Lenz, middle paragraph of page 5, that opacity and transparency of a pigment depends on chemical structure as well as various physical parameters and PR 264 is not transparent at sizes of 50 m²/g or less. Further, opacity would interfere with flop, declaration page 5 paragraph 1.

Applicants thus respectfully submit that in addition to Hendi not disclosing component b of the instantly amended claims, Hendi in total does not appear to disclose the instant, opaque PR 264 of component a. Applicants further respectfully submit, that as Hendi provides a teaching directed to enhanced flop of transparent pigment compositions, the skilled inventor would not consider such methods in attempts to improve the hiding power of an opaque pigment system.

Given this rationale, Applicants do not believe that deletion of dioxazines, indanthrones and phthalocyanines from component b in the instant amendments is necessary to overcome the cited art, however, in order to further prosecution in as clear a manner as possible, the deletion is made.

Finally, regarding Hendi, the flop-enhancing agents of Hendi are not only chemically different from component (b) of the instantly amended claims, they are also coloristically different. While the flop-enhancing agents of Hendi are green to bluish violet as stated in the enclosed declaration, page 4, lines 17-18, the instant most bluish compounds (Pigment Violet 19 and Pigment Violet 29) are in fact red-violet to bluish red and red to bordeaux, as shown in the attached excerpt from Industrial Organic Pigments, pages 457 + 470.

As stated before, Hao discloses single phase solid solution pigments (column 1 / lines 4-5). Single phase solid solutions have a guest component wholly embedded in the host's crystal lattice. In other words, there is only one species present. In the instant invention, there are two, physically discrete pigments.

The solid solutions of Hao as disclosed to have good hiding power (col. 8 / l. 54 55). It has been found, however, that the instant mixtures have even better hiding power than the solid solutions of Hao. For example, the enclosed declaration of Lenz compares the hiding power in a coating of a physical mixture prepared via the instant invention using the pigments and concentrations found in Example 9 of Hao, with the solid solution of Example 9 in Hao. As shown on pages 2 and 3 of the declaration, the instant mixture is much more opaque than the solid solution of Hao.

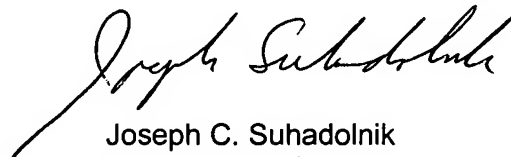
In summary, in the instantly amended claims there is no overlap between instant component b and the flop enhancing agent of Hendi. The pigment compositions of Hendi are for transparent coatings with enhanced flop, the instant coatings are opaque where flop is expected to be minimal. The instant compositions are shown to have greater hiding power than the solid solutions of Hao.

Applicants respectfully submit that the greater hiding power of the instant compositions is not suggested in the art and is quite surprising especially in light of the data relating to Hao found in the enclosed declaration. Applicants also respectfully note that the cited art does not meet the limitations of the instantly amended claims.

Applicants therefore kindly ask that the rejections under 35 USC 103(a) over Hendi et.al., US 5,618,343 and Hao et. al., US 5,821,373 be withdrawn and that claims 1, 3-9 and 12-23 be found allowable.

In the event that minor amendments will further prosecution, Applicants request that the examiner contact the undersigned representative.

Respectfully submitted,



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Enclosures: – Declaration under rule 132 of Roman Lenz
 – Industrial Organic Pigments, pages 457 + 470